

GUJARAT TECHNOLOGICAL UNIVERSITY**SEMESTER– 3 EXAMINATION – WINTER 2012****Subject code: 131302****Date: 10/01/2013****Subject Name: Environmental Microbiology****Time: 10:30 AM – 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Differentiate between: Prokaryotic and Eukaryotic Cell, giving at least six point of difference. **06**

(b) What is pure culture? Enlist and explain all the four techniques for isolation of pure culture. **08**

Q.2 (a) What are physical agents? Enlist and explain any two physical agents for control of microbes. **07**

(b) Draw a neat sketch of bacterial cell and explain its different parts. **07**

OR

(b) Explain the types of viruses with sketches. **07**

Q.3 (a) Define the following terms giving applications **08**

(i) Sterilization

(ii) Sanitizer

(iii) Pasteurization

(iv) Disinfection

(b) Write a note on use of Chlorine and chlorine compounds for disinfection. **06**

OR

Q.3 (a) Enlist and explain the factors affecting the antimicrobial action. **07**

(b) Enlist the mode of actions of antimicrobial agents and explain any one in detail **07**

Q.4 (a) Explain the classification of bacteria based on shape and nutritional requirement. **07**

(b) Give the clear difference between Optical (light) microscope and electron microscope. With the help of neat diagram, explain the working principle of student (bright field) microscope. **07**

OR

Q.4 (a) What is the role of algae in environment? Explain its beneficial and harmful effects. **07**

(b) Give the classification of protozoa and explain any one type in detail. **07**

Q.5 (a) Explain the procedure to perform the Presumptive Test to estimate the MPN of Water. Highlight the importance of MPN test in drinking water. **07**

(b) Write a note on Importance of Microbiology in Environmental Engg. **07**

OR

Q.5 Write down the symptoms, causative agents, prevention and treatment of any two of the following: **14**

(1) Typhoid

- (2) Cholera
- (3) Hepatitis